"QC REPORTS"

Name of Work :Package-3 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS ,B sector opposite RTO Shopping Complex in ward no 04. 4Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04.
5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04

"VOLUME - II"

"FIRST AND FINAL BILL"

Newzen Consultants Bangalore

NZ/QC/YPD/T&F-W4/2018-19/P3-BD3 **Date: 25-05-2018**

1. TEST REPORT ON BITUMEN SAMPLE:

Sub: Testing of Bitumen sample VG-30 Grade used in Dense Graded Bituminous Macadam.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

Technical Reference: Ministry of Road Transport and Highways, V Revision, 2013 and IS 73: 1992.

TABLE 1.1 ;

SL No	Details	Test Results	Requirements as per I.S 73 –1992 Specifications
1.	Penetration at 25^0 C	**51.90^0 C**	Min. 45
2.	Ductility Value at 25^0 C	**114 cm**	40
3.	Flash point	**226^0 C**	Minimum 220^0 C
4.	Softening point	**52.10^0 C**	Min. 47

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Newzen Consultants Bangalore

NZ/QC/YPD/T&F-W4/2018-19/P3-BD3 **Date: 25-05-2018**

1. TEST REPORT ON BITUMEN SAMPLE:

Sub: Testing of Bitumen sample VG-30 Grade used in Dense Graded Bituminous Macadam.
{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}
Ref.: Material testing/PMC/17-18,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).
Technical Reference: Ministry of Road Transport and Highways, V Revision, 2013 and IS 73: 1992.

TABLE 1.1 ;

SL No	Details	Test Results	Requirements as per I.S 73 –1992 Specifications
1.	Penetration at 25^0 C	**51.90^0 C**	Min. 45
2.	Ductility Value at 25^0 C	**114 cm**	40
3.	Flash point	**226^0 C**	Minimum 220^0 C
4.	Softening point	**52.10^0 C**	Min. 47

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NEW TECHNOLOGIES TO INNOVATE

Newzen Consultants Bangalore

NZ/QC/YPD/T&F-W4/2018-19/P3-CD3

Date: 25-05-2018

1. TEST REPORT ON COARSE AGGREGATE:

Sub: Testing of Coarse Aggregate used in Dense Graded Bituminous Macadam.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TABLE 1.1 ;

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**26.03%**	Not more than 27.00 % for DBM
2.	Combined Flakiness and Elongation index, %	**26.17%**	Not more than 35.0 %
3.	Water absorption, %	**0.37 %**	Not more than 2.0 %
4.	Specific gravity	**2.58**	------
5.	Soundness	**6.62 %**	Max. 12 % in Sodium Sulphate

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NZ/QC/YPD/T&F-W4/2018-19/P3-DM11

Date: 28-05-2018

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

A. Type of Construction : **Dense Graded Bituminous Macadam.**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.51 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	**100**	100
26.5	**96.30**	90-100
19.0	**83.05**	71-95
13.20	**78.50**	56-80
4.75	**51.80**	38-54
2.36	**34.20**	28-42
0.300	**18.40**	7-21
0.075	**6.35**	2-8

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NZ/QC/YPD/T&F-W4/2018-19/P3-DS11 Date: 29-05-2018

1.TEST REPORT ON BITUMINOUS MIXES :

(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1154**	900
2	Marshall Flow at 60°C, mm.	**3.28**	2.0 - 4.0

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Newzen Consultants Bangalore

NZ/QC/YPD/T&F-W4/2018-19/P3-DM12 **Date: 29-05-2018**

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

A. Type of Construction : **Dense Graded Bituminous Macadam.**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.53 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	**100**	100
26.5	**98.45**	90-100
19.0	**84.60**	71-95
13.20	**76.35**	56-80
4.75	**52.00**	38-54
2.36	**37.05**	28-42
0.300	**1.10**	7-21
0.075	**6.45**	2-8

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Newzen Consultants Bangalore

NZ/QC/YPD/T&F-W4/2018-19/P3-DS12

Date: 30-05-2018

1.TEST REPORT ON BITUMINOUS MIXES :

(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1176**	900
2	Marshall Flow at 60°C, mm.	**3.32**	2.0 - 4.0

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Newzen Consultants Bangalore

NZ/QC/YPD/T&F-W4/2018-19/P3-DM13

Date: 30-05-2018

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

A. Type of Construction : **Dense Graded Bituminous Macadam.**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.50 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	**100**	100
26.5	**96.45**	90-100
19.0	**89.15**	71-95
13.20	**75.80**	56-80
4.75	**49.25**	38-54
2.36	**36.40**	28-42
0.300	**19.25**	7-21
0.075	**6.75**	2-8

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Newzen Consultants Bangalore

NZ/QC/YPD/T&F-W4/2018-19/P3-DS13

Date: 31-05-2018

1.TEST REPORT ON BITUMINOUS MIXES :

(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1182**	900
2	Marshall Flow at 60°C, mm.	**3.34**	2.0 - 4.0

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NZ/QC/YPD/T&F-W4/2018-19/P3-DM14 **Date: 31-05-2018**

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

A. Type of Construction : **Dense Graded Bituminous Macadam.**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.53 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	**100**	100
26.5	**97.25**	90-100
19.0	**84.10**	71-95
13.20	**76.50**	56-80
4.75	**52.00**	38-54
2.36	**39.05**	28-42
0.300	**16.45**	7-21
0.075	**6.20**	2-8

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NZ/QC/YPD/T&F-W4/2018-19/P3-DS14

Date: 01-06-2018

1.TEST REPORT ON BITUMINOUS MIXES :

(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1179**	900
2	Marshall Flow at 60°C, mm.	**3.31**	2.0 - 4.0

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NZ/QC/YPD/T&F-W4/2018-19/P3-DM15 Date: 02-06-2018

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

A. Type of Construction : **Dense Graded Bituminous Macadam.**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.53 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	**100**	100
26.5	**98.60**	90-100
19.0	**85.25**	71-95
13.20	**78.55**	56-80
4.75	**53.00**	38-54
2.36	**37.45**	28-42
0.300	**19.20**	7-21
0.075	**7.10**	2-8

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Newzen Consultants Bangalore

NZ/QC/YPD/T&F-W4/2018-19/P3-DS15

Date: 02-06-2018

1.TEST REPORT ON BITUMINOUS MIXES :

(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.

{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1164**	900
2	Marshall Flow at 60°C, mm.	**3.27**	2.0 - 4.0

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For Newzen Consultants Bangalore
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NEWZEN CONSULTANT BANGALORE, #13,10TH MAIN ROAD 2ND CROSS JNANAJYOTHI NAGARA,
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NZ/QC/YPD/T&F-W4/2018-19/P3-BD4 **Date: 31-05-2018**

1. TEST REPORT ON BITUMEN SAMPLE:

Sub: Testing of Bitumen sample VG-30 Grade used in Dense Graded Bituminous Macadam.
{Project*: **Package-3** 1.Improvements to Roads And Drains at 4th ,5th, 6th ,7th Cross Road at Judicial Layout in ward no.04. 2.Improvements to Roads And Drains at 2nd ,3rd 4th and 5th 6th 7th main roads at Judicial Layout in ward no.04. 3.Improvements to Roads And Drains SFS , B sector opposite RTO Shopping Complex in ward no 04. 4Improvements to Roads And Drains main and cross of Someshwara nagara in ward no 04. 5.Improvements to Roads And Drains balance main and cross roads of B sector in ward no 04.}
Ref.: Material testing/PMC/17-18,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).
Technical Reference: Ministry of Road Transport and Highways, V Revision, 2013 and IS 73: 1992.

TABLE 1.1 ;

SL No	Details	Test Results	Requirements as per I.S 73 –1992 Specifications
1.	Penetration at 25^0 C	**53.20^0 C**	Min. 45
2.	Ductility Value at 25^0 C	**126 cm**	40
3.	Flash point	**239^0 C**	Minimum 220^0 C
4.	Softening point	**52.60^0 C**	Min. 47

KIRAN. R
M.E, (Civil-Engg)

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